

IN THE SPECIFICATION

Please replace paragraph 9 with the following amended paragraph.

In accordance with one aspect of the present invention, a method is provided for optimizing pre-saturation in magnetic resonance imaging. The method first generates a  $B_0$  field map of each scan slice of a scan volume. Thereafter, a first frequency of RF pre-pulses is obtained by a standard procedure. The  $B_0$  field map of each scan slice is then used to calculate the median value of the  $B_0$  magnetic field over each scan slice as well as the percentage of positive and negative scan slice pixels in each scan slice. In case the percentage of either the positive scan slice pixels or the negative scan slice pixels in each scan slice is greater than a predefined threshold value, a second frequency of RF pre-pulses is calculated for each scan slice. The second frequency of RF pre-pulses for a scan slice is calculated by adding the median value of the  $B_0$  magnetic field over the scan slice to the first frequency of RF pre-pulses. However, ~~if the~~when it is determined that the percentage value of positive scan slice pixels or the percentage value of negative scan slice pixels of a scan slice does not exceed the predetermined threshold value, a user of the MRI system is advised to improve shimming. After shimming has been improved by the user, the above-mentioned steps are repeated for each scan slice, until the percentage of either the positive scan slice pixels or the negative scan slice pixels exceeds the predefined threshold value. Thereafter, MRI images of the scan slices are obtained using the RF pre-pulses at the second frequency for each scan slice.

Please replace paragraph 27 with the following amended paragraph.

At step 210, ~~if for~~when it is determined that for at least one scan slice, the percentage value of positive scan slice pixels or the percentage value of negative scan slice pixels of the scan slice does not exceed the predetermined threshold value, step 212 is performed.

Please replace paragraph 30 with the following amended paragraph.

Referring back to step 210, if forwhen it is determined that for each scan slice, the percentage value of positive scan slice pixels or the percentage value of negative scan slice pixels of the scan slice exceeds a predetermined threshold value, step 214 is performed.